Abstract

An electrodeionization apparatus has an anolyte compartment 17 having an anode 11, a catholyte compartment 18 having a cathode 12, concentrating compartments 15, and desalting compartments 16. The concentrating compartments 15 and the desalting compartments 16 are alternately formed between the anolyte compartment 17 and the catholyte compartment 18 by alternately arranging a plurality of anion-exchange membranes 13 and a plurality of cation-exchange membranes 14. The desalting compartments 16 are filled with ion-exchanger and the concentrating compartments 15 are filled with ion-exchanger, activated carbon, or electric conductor. Electrode water flows into the anolyte compartment 17 and the catholyte compartment 18. Concentrated water is introduced into the concentrating compartments 15. Raw water is fed into the desalting compartment 16 to produce the deionized water from the desalting compartment 16. Water containing silica or boron at a lower concentration than the raw water is introduced into the concentrating compartments 15 as the concentrated water in a direction from a side near an outlet for the deionized water toward a side near an inlet for the raw water of the desalting compartments 16. At least a part of concentrated water flowing out of the concentrating compartments 15 is discharged out of a circulatory system.